(Also referred to as FORM PTO - 1465)

REQUEST FOR REEXAMINATION TRANSMITTAL FORM

Address to:
Box Reexam
Assistant Commissioner for Patents
Washington, D.C. 20231:

Docket No.: 7278*1

Date: February 3, 2000

1. ☒ This is a request for reexamination pursuant to 37 CFR 1.510 of patent number 5,806,063 issued September 8, 1998
2. ☒ The name and address of the person requesting reexamination is:
   Paul E. Crawford
   Connolly Bove Lodge & Hutz LLP
   1220 Market Street, Wilmington, DE 19801
3. ☒ a. A check in the amount of $ 2,520.00 is enclosed to cover the reexamination fee, 37 CFR 1.20(c); or
   ☒ b. The Commissioner is hereby authorized to charge any additional the fee as set forth in 37 CFR 1.20(c) to Deposit Account No. 03-2775.
4. ☒ Any refund should be made by ☒ check or by ☐ credit to Deposit Account No. _____. 37 CFR 1.26(c).
5. ☒ A cut-up copy of the patent to be reexamined with a single column of the printed patent securely mounted on one side of a separate paper or a permanent reproduction thereof is enclosed. 37 CFR 1.510(b)(4).
6. ☐ A copy of any disclaimer, certificate or correction or reexamination certificate issued in the patent is included.
7. ☒ Reexamination of claim(s) 1-15 is requested.
8. ☒ A copy of every patent or printed publication relied upon is submitted herewith
9. ☒ An English language translation of all necessary and pertinent non-English language patents or printed publications is included.
10. ☒ The attached detailed request includes at least the following items:
    a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.510(b)(1)
    b. An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited prior art to every claim for which reexamination is requested. 37 CFR 1.510(b)(2).
11. ☐ A proposed amendment is included (only where the patent owner is the applicant). 37 CFR 1.510(e).
12. ☒ a. It is certified that a copy of this request (if filed by other than the patent owner) has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c).
    The name and address of the party served and the date of service are:
    Guy R. Gosnell, Esq. & William C. Cray, Esq..
    Bell, Seltzer, Park & Gibbon, P.A. Levin & Hawes
    P.O. Drawer 34009, Charlotte, NC 28234 384 Forest Avenue, Suite 13, Laguna Beach, CA 92651
    Date of Service: February 3, 20000; or
    ☐ b. A duplicate copy is enclosed since service was not possible.
13. ☐ The requestor's correspondence address (if different from Number 2 above):
    N/A

02/08/2000 MTWITTY 00000008 90005628
01 FC:147 2520.00 OP

14. ☒ The patent is currently the subject of the following concurrent proceeding(s):
    ☐ a. Copending reissue application Serial No. _____
    ☒ b. Copending reexamination Control. No. 90/005,592
    ☐ c. Copending Interference No. _____
    ☐ d. Copending litigation styled:

Authorized Signature

☐ *Patent Owner*
☒ *Third Party Requestor*
February 3, 20000 *Date*
☐ *Attorney or Agent for Patent Owner*
☒ *Attorney or Agent for Requestor*

90/005,592

PTO/SB/57 (10-92)
::ODMA\MHODMA\CB;76015;1

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

"Express Mail" No. EJ802264055US **Date:** February 3, 2000

I hereby certify that this paper, along with any other paper or fee to this paper as being transmitted herewith, is being deposited with the United States Postal service "Express Mail Post Office to Addressee" service under 37 CFR 1.10, postage prepaid, on the date indicated above and is addressed to Box Reexam, Assistant Commissioner of Patents, Washington, D.C. 20231.

PAUL E. CRAWFORD.
(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

REQUEST FOR REEXAMINATION

This is a request for reexamination of claims 1-15 of U.S. Patent 5,806,063.

New Issue of Patentability

The requester submits that a new issue of patentability is raised by any one of:

1. Ohms, "Computer Processing of Dates Outside the 20th Century", IBM Systems Journal, Volume 25, Number 2, 1986, pages 244-251;
2. Browe, "Intelligent Report Maintenance Using Dialogue Management", FOCUS Systems Journal, March 1990, pages 70-78;
3. Japanese Published Application 05-027947, February 5, 1993 and translation; and
4. The Millennium Journal, Volume II, Number IV, July 1995, pages 2-4;
5. Lysgaard, "The Time Bomb", IFIP TC8 Conference on Governmental and Municipal Information Systems, p. 513-519, 1987;
6. Shaw, "CAP Gemnni Tackles the Year 2000", NEWS 3X/400, June 1995, p. 30;
7. IBM, SAA AD/Cycle Language Environment, Programming Guide, Version 1, Release 3, March 1994; and
8. "SAS Language: Reference, Version 6. First Edition 1990.

Each of the foregoing references disclose the subject matter of at least one claim of the patent, none of these references were considered during the prosecution and each was published more than one year prior to the filing date of the application. Inasmuch as the only prior art rejection was withdrawn during prosecution, any pertinent reference would raise a new issue of patentability.

In the following portions of this request, the above identified references will be relied on, along with Shaughnessy U.S. Patent 5,630,118. Copies of these references are bound and filed herewith.

The Dickens Patent

The patent was issued on September 8, 1998 based on an application filed on October 3, 1996. The application succinctly (in five typed pages) purports to describe a solution to the year 2000 (or Y2K) problem. The problem arises from the conjunction of the use of two digits to designate a year, and the transition from the 20th to the 21st century. Even more plainly, consider whether the year "01" is before or after the year "98". By using only two digits to identify the year, it is impossible to tell whether 01 refers to 2001 or 1901.

The specification proposes a preferred date format of YYMMDD (where Y represents a year digit, M represents a month digit and D represents a day digit). Given a database with this format, the patent describes a solution as follow:

"A 10-decade window with a Y_AY_B value for the first year of the 10-decade window is selected, Y_AY_B being no later than the earliest Y_1Y_2 year designator in the database. A century designator C_1C_2 is determined for each date in the database, C_1C_2 having a first value if Y_1Y_2 is less than Y_AY_B and having a second value if Y_1Y_2 is equal to or greater than Y_AY_B. Each date in the database is formatted with the values C_1C_2, Y_1Y_2, M_1M_2, and D_1D_2."

In other words, given a database or a collection of data which is restricted to a date range of no more than 10 decades, any 2-digit year date representation can be precisely located relative to the century boundary by selecting a pivot year (sometimes also called the base year) which is no larger than the earliest date represented in the database. This selection requires knowledge of the actual years represented in the database – i.e., the selection cannot be made based solely on the last two digits. Having made the selection, to locate any year we merely compare the two digit representation of the year in question (Y_1Y_2) to the two digit representation of the pivot year (Y_AY_B). If the year is smaller than the pivot year, then the date must be beyond the century boundary, i.e., for Y2K, the year is in the 21st century. This follows because we chose the pivot year to be as early as the earliest year in the collection. Once we determine that the year in question (Y_1Y_2) is smaller than the pivot year, then by definition the year must be beyond the century boundary. Conversely, if the year is greater than or equal to the pivot, then the year is determined to be in the earlier century, i.e., the 20th century. The result again follow from the manner in which we chose the pivot.

For example, assume the database has data corresponding to dates from 1967 on. We select a pivot of 66 (we could have selected any number less than 66 or even 67, but no more than 67). Assume we retrieve 85 as the year in question. Since 85 is larger than 66 we determine that 85 refers to 1985 and not to 2085. Now assume we retrieve 42. We determine that 42 is less than 66 and so determine that 42 refers to 2042 and not to 1942.

This is windowing. It is claimed by Dickens. Significantly, however, it is also described by the prior art as will be described below.

The Prior Art in Context

Windowing, as just described, is equally well described by any of the eight references identified above, one of which (Ohms) anticipates the Dickens application by 8 years. Beyond windowing per se, as just described, the claims include additional subject matter apparently selected to give the appearance of claims with varying scope. In fact, as applied to Y2K the claims contain duplicative subject matter (such as claims 2-3 which specify that the dates being processed include the year 2000 and that the two centuries involved are the 20th and the 21st). Other claims contain peripheral subject matter (such as adding a sorting step subsequent to date processing, as if the connection between correct sorting and date processing was a contribution of the purported inventor) or, like claims 7 and 12, specify that date data can be converted from one format to another. And finally still other claims (8 and 13) pick out a particular set of years, apparently only because each member of the set is divisible by 10.

Windowing was so common that by the October 1994 publication date of Milam, "An Extended Date Library for C", C/C++ Users Journal, V 12, #10, pp 67-80, it was a standard function in a general purpose date processing library for application to instances of two digit year dates. See the portion of listing 6 appearing at p. 78. The general listing assumes "80" as the pivot and the comments in the listing includes the following note "anything less than 80 is considered to be in 21st century".

Even prior to Milam's 1994 publication however, the art was well acquainted with "windowing". In 1987 Kund Lysgaard presented "The Time Bomb" at the Conference on Governmental and Municipal Information Systems, in Budapest. Lysgaard's "Time Bomb" would later be referred to as the Y2K bug. Lysgaard recognized that given a date range of 100 years or less, the two digit representation of a year is theoretically adequate (p. 515). Lysgaard also recognized that all that was needed was the identification of the start year for the 100 year interval (Dickens refers to this parameter as Y_AY_B). Lysgaard continues:

> "Information that the relevant interval starts in 1955 will for example, mean that 55 - 99 is interpreted as 1955 - 1999, whilst 00 - 54 is interpreted as 2000 – 2054." (p. 515)

As "windowing" became more widely known the descriptions became shorter and shorter. By June of 1995, Shaw's description was only a single sentence. He said (of Y2K solutions):

> Another common solution is to pick a cut-off point, say 1950, where any two-digit dates after that point (51, 52 and so on) are treated as 20th century dates and any dates before that (01, 02, and so on) are considered post-millennium dates." "CAP Gemnni Tackles the Year 2000", NEWS 3X/400, June1995, p. 30

Of course, Shaw's "cut-off" is just Dickens' Y_AY_B. (Milam is bound with the other prior art).

Prosecution History

There are only two significant events in the prosecution history. On November 17, 1997 the Examiner issued an Office Action rejecting all fifteen claims on two different grounds. All claims were rejected as being anticipated by an IBM publication and all claims were rejected under 35 U.S.C. 112, first paragraph.

The response made no attempt to distinguish the claims from the IBM publication, rather that applicant purported to antedate the publication, alleging a reduction to practice in April 1996 (based on exhibit G) and alleging a conception prior to some unidentified date in or before October 1995.

Subsequent to filing the response, the Examiner withdrew the rejections and indicated that claims 1-15 were allowed. The Examiner noted:

"The prior art of record, taking into account the affidavit of the inventor, received 3/24/98, swearing behind the reference of the previous action, does not anticipate nor suggest the set of limitations of the claims, comprising the threshold year digits as used to determine a pair of century digits to be used for computation, but without enlarging the number of date digits of the database." (Emphasis added).

Note there is nothing in the independent claims related to the emphasized portion of the Examiner's statement. Furthermore, dependent claims 9 and 14 appear to contradict the Examiner's statement.

The patent issued on September 8, 1998.

The Claims

The patent has 15 method claims, claims 1 and 11 are independent.

Claims 1 and 11 are generally similar, each including the step of:

providing a database which includes data using YY, MM and DD digits where "all of the symbolic representations of dates falling within a 10-decade period of time".

Both claims also have a step of selecting a 10-decade window with a value (Y_AY_B) for the first decade being no later than the earliest year in the database.

As disclosed in the specification, the window "may be arbitrarily selected" (col. 3, line 8). The first year of the selected window is $Y_A Y_B$ (col. 3, lines 13-14). "This selection process is performed in a completely automated fashion by the computer, without human input other than to select the starting date of the 10-decade window. (col. 3, line 35-38; emphasis added). The "starting date" is of course the year which is also identified as $Y_A Y_B$. The human selection of $Y_A Y_B$ is also seen in Exhibit A (referred to at col. 3, line 58) inasmuch the parameter which is $Y_A Y_B$ in Exhibit A only appears "hard coded" in the line reading:

if cl$[1:2] < 50 then

This if statement operates on the first two digits of the string cl$, that is cl$[1:2] and determines if these digits are less than (<) the quantity 50. Thus Y_AY_B (or 50) has been selected by the person who wrote the code – and not the computer.

Since this disclosure (col. 3 lines 35-38 and Exhibit A) is the ONLY disclosure of the manner of selection of the window and/or $Y_A Y_B$ it follows that the "selection" clause must be interpreted to at least include human selection of the window and/or $Y_A Y_B$. Because of the paucity of disclosure supporting the "selection" clause it is correctly limited to human input.

Both claims have a step of determining a century designator by comparing a year designator (Y_1Y_2) with Y_AY_B and then reformatting the symbolic representation of the dates using the determined value of C_1C_2. The specification describes one way to "reformat" the

symbolic representation (at col. 3, lines 41-43) which is to actually prepend C_1C_2 to YYMMDD. This reformatting expressly described in claim 11. Claim 1 appears to be broader since it only requires the use of C_1C_2 in the reformatting. In other words while claim 11 specifies the format produced by the reformat operation, claim 1 only requires the parameter C_1C_2 be used in the reformat operation. However, since the specification fails to describe any other way to use C_1C_2 in reformatting the symbolic representation of the date (as is claimed in claim 1) it is not apparent there is any difference in claims 1 and 11 in this regard. In other words, while on its face claim 1 appears to have a broader "reformat" clause than claim 11, in fact the paucity of disclosure requires both clauses to have identical scope.

Claim 11 also includes an additional step of "sorting the dates" using the recited format.

Claims 1 and 11 require interpretation because each includes a step of "selecting a 10-decade window with a Y_AY_B value for the first decade of the window". Considering only the claim language, it is not apparent what the "value" for a decade might be. A decade by definition includes 10 years, each of which has, or represents, a different value.

Dependent claim 8 specifies that Y_AY_B is selected such that Y_B is zero. This suggests that whatever the "value" of the decade recited in claim 1 is, it is not necessarily a 2-digit number divisible by 10. Reference to the specification fails to uncover any definition for the phrase "selecting a ... window with a ... value". The specification describes a 10-decade window where Y_AY_B is the "value for the first year" of the window. If claims 1 and 11 called for selecting such a value, there would be no need for interpretation. The best that can be said is that the claims should be interpreted to mean that Y_AY_B is the value for the first year of the 10-decade period of the window. The claims will be so interpreted in the following portions of this document.

Claims 1 specifies"
"determining a century designator ... for each symbolic representation of a date in the data base ..." and "reformatting the symbolic representation of the date".

Claim 11, in a similar fashion specifies:
"determining a century designator ... for each date in the data base" and "reformatting each date ...".

While these claims appear to require the determining and reformatting steps to be performed for "each" element of the data base, they do not specify either (1) the time period over which the steps are applied or (2) the order in which these steps are to occur. In other words, the determining and reformatting steps might be applied to 25 % of the data base at one time, and to the remaining 75% of the data base at another time, or to disparate parts of the data base at different times. In addition, the determining step might be applied to a set A of the data, and the following reformatting step could be applied to only a part of set A of the data. At a later time the determining and reformatting steps are applied to all of the non-set A data. Finally at a still later time the reformatting step may be applied to that part of the set A data not yet reformatted. As will become clear each of the references describe procedures to eliminate data ambiguity as a consequence of the conjunction of the turn of the century and the use of two digit year dates.

The procedures which are described in each of the references are taught to be applied to each element of the associated data base, just as in these claims. Consequently the claims do not distinguish from the references through the use of the term "each" in the claims.

Finally, claim 1 has to be interpreted to properly read the "providing" clause. That clause requires:

> providing a database with symbolic representations of dates stored therein according to a format wherein M_1M_2 is the numerical month designator, D_1D_2 is the numerical day designator, and Y_1Y_2 is the numerical year designator, all of the symbolic representations of dates falling within a 10-decade period of time;

The claim expressly says that it is the symbolic representations which fall within a 10-decade window. Contrast claim 1 with claim 11 which notes that it is the dates which fall within the 10-decade window. It should be apparent (with respect to claim 1) that the two-digit year representations, Y_1Y_2 (only two digits) by definition cannot fall outside a 10-decade period of time.

References

Collectively the references span almost a decade, e.g., beginning with the 1986 Ohms publication and ending with the July 1995 Millennium Journal. Each of the references is concerned with date processing in the context of Y2K.

Ohms

The 1986 Ohms publication is expressly directed at date processing occasioned by the end of the 20th century, e.g., the Y2K problem. Ohms in general describes conversions between different date formats. The fact that he contemplates applying these conversions to databases using YYMMDD data to express dates is readily identified by the table on page 247. The table indicates that Ohms describes a function to convert a "short Gregorian" date (having the format YYMMDD). Ohms succinctly describes the subject matter claimed by Dickens in the first full paragraph of the right hand column on page 248. Ohms states:

> "However, it may be necessary to provide a conversion function that receives a definition of the implied century as a parameter. An excellent way to do this unambiguously is to specify a year as the desired starting point of a 100-year range. For example, if the starting year for the range is specified as 1925, dates with year digits of 25 through 99 would be between 1925 and 1999, and dates with year digits of 00 through 24 would lie between 2000 and 2024."

Ohms emphasizes the caution against using this procedure where the date range spans more that 100 years by indicating (at page 249 in the left hand column) "Where systems contain dates that span a range of more than 100 years, the century must have already have been carried. In the rare event that this is not true, immediate conversion is unavoidable". Ohms like Dickens

works with a 10-decade window (10-decades is identically 100 years). It should be emphasized that the dates within Ohms' 100 year range typically fall into two different centuries (just as in Dickens). The Ohms "starting point" (which is the same as the Y_AY_B parameter of Dickens) *defines* a 10-decade window (or 100 year range). It should be noted that even in lines 28-38 on p. 248 Ohms is still referring to the100 year range (which is identically the Dickens 10-decade window). Ohms, in the same passage refers to a "beginning date" (which is the same as the "starting point") "set eighty years prior to the current systems date". This sentence relates the "beginning date" or "starting point" to a current date (the current systems date). This duration (eighty years in the text) has *nothing* to do with the duration or extent of 10-decade window (or 100 year range). In this passage Ohms relates the 100 year window to the present, so as to indicate how far into the future the window extends. The Ohms example in which the start year is eighty years in the past also means that the data base accommodates data for 20 years into the future (since the total span is 100 years). We will see other references also working with this relationship. All of the references which work with this relationship are more comprehensive than Dickens because *Dickens never mentions this relationship.*

Lysgaard

Lysgaard describes, in "The Time Bomb" presented at the 1987 Conference on Governmental and Municipal Information Systems, in Budapest, his solution to the problem caused in EDP by the use of two digit dates as the year 2000 approaches. Lysgaard's "Time Bomb" would later be referred to as the Y2K bug. Lysgaard stated "If at all times a date has a relevant range of less than (or equal to) 100 years, then a two digit year is theoretically adequate to identify the year within the relevant interval of time" (p. 515). Lysgaard also recognized:

> "If information as the valid time interval is added to the programme - maybe just the start year for the 100 year interval - the programmes will be able to handle all time calculations correctly."

What Lysgaard called the "start year" is the same parameter that Dickens refers to as Y_AY_B. This follows since there is no data prior to the "start year" in the data base. This also meets Dickens' prescription that no year representation be earlier than Y_AY_B. Lysgaard continues:

> "Information that the relevant interval starts in 1955 will for example, mean that 55 - 99 is interpreted as 1955 - 1999, whilst 00 - 54 is interpreted as 2000 – 2054." (p. 515)

Lysgaard also calls attention to the errors which result when sorting using two digit years (p. 516). One solution he proposes is the "temporary addition of auxiliary fields stating the century and included in the sorting criteria" (p. 516). This is exactly the Dickens solution. Dickens prefers to call the "temporary addition of auxiliary fields" a "reformatting", but however you name the operation it is the prepending of YYMMDD with CC, referencing the correct century for the date and then a straight numerical sort on the augmented (CCYYMMDD) data.

Browe

Browe describes a date utility, which perform several functions in the context of Y2K. At the bottom of page 70 a comment to the Browe software describes the purposes of REFDATE and indicates that "the reference date is typed in MMDDYY format and must refer to a date from 01/01/1950 to 12/31/2049 for this FOCEXEC to work correctly." In other words, the date range must be no more than 10-decades. On the next page (page 71) Browe describes how 2-digit years are properly interpreted and reformatted to take into account the transition from the 20th to the 21st century. The logic is shown in detail as follows:

"IF &YR GE 50 AND &YR LE99 THEN 19/&YR
ELSE 20/&YR".

This can be expressed in text as follows: if the 2-digit parameter &YR is greater than or equal to (this is the meaning of GE) 50, and the same parameter is less than or equal to (this is the meaning of LE) 99, then change the format of the year from the two digit parameter &YR to the four digits 19&YR, otherwise reformat the 2-digit year date to the four digits 20&YR.

As an example, if the parameter &YR is 42 (not between 50 and 99), then this logic will reformat the year as 2042 and if the &YR parameter was 67 (between 50 and 99), then this logic would format the year as 1967.

Note that Browe uses 50 as the test parameter (Y_AY_B in terms of Dickens). This is the earliest date in the range so that there are no earlier dates.

Published Japanese Patent Publication 05/027,947

Attached to this request is both the Japanese patent publication itself, along with an accurate translation thereof.

The Japanese patent publication is also directed at Y2K. The translation (page 2) notes, the purpose is:

> "To guarantee the year order, even for years after 2000AD, with the current file format, even when the year is managed by the last 2 digits of the date in digital files."

The Y2K problem is described at page 3 of the translation where the text indicates that systems using the last two digits of the years to indicate dates do not take into consideration years after 2000AD. The text continues that:

> "When ascending/descending order is handled by processing that evaluates magnitude and by sort/merge processing using normally numbered years, their relative magnitudes are represented by formula 1
>
> 1999 > 1998 > 2001 > 2000."

In other words prior art systems focusing only on years expressed as two digits will, when sorting the four years 1998-2001, produce a result which indicates that the latest year is 1999, which is preceded by 1998 which is preceded by 2001 which is preceded in turn by 2000. This clearly is incorrect. On page 4, the text indicates that the invention provides a method of guaranteeing the proper year order and indicates that in general when there are data present that indicate years in the 1900s and 2000s AD, the data code that represents the date is replaced by another code so the year order will be maintained. The manner in which this is accomplished is described at the bottom of page 4. A module 10 is activated to effect preprocessing in order to handle the year calculations. The text indicates:

> "Note that, in module (10), a range of the last 2 digits for which code transformation will be performed are specified in advance. Replacement involves numbers for years in the 2000's, where the last two digits are smaller than the smallest number in the last 2 digits in the years in the 1900's. For example, when data in file (6) for years AD begin with the year 1973, the last two digits are replaced using 00 (year 2000) for 72 (year 2072). The present application example is an example where there are data from year 1960 in file (6), such a range is specified so that the last 2 digits will be transformed to codes 00-59".

In other words, year data which is "smaller than the smallest number in the last two digits in the years in the 1900s" are recoded to indicate dates in the 21st century. Of course Dickens called recoding, reformatting. What the translation refers to as "the smallest number in the last two digits in the years in the 1900's", Dickens labeled Y_AY_B. The two examples employed illustrate this processing is necessarily limited to 10-decade ranges. The text indicates when the input file has year dates beginning with the year 1973 (Y_AY_B=73), the data is recoded to indicate dates up to and including 72 lie in the 21st century. Similarly, when the lowest dates in the input file is 1960 (Y_AY_B=60) dates 00-59 are recoded (or reformatted) indicate they lie in the 21st century.

The Millennium Journal

From its title it is clear that this reference also deals with Y2K. The extract that is relied on here describes a variety of date formats that are employed. Most pertinent is the text under the heading "logic-based century determination". The text indicates that this is also referred to as windowing. The text indicates:

> "In windowing, the two digit years are left alone in the files. A base year is selected (e.g., "50") where every year starting with (or, in some cases, greater than) "50" (Y_AY_B=50) through "99" is treated as a 1900 date, and any year less than (or equal to) "50" is treated as 2000."

The very next paragraph indicates that windowing is associated with sorting. The text indicates that when a subroutine is used to make the specified format change, an exit must be made before sorting is implemented.

SAA AD/Cycle Language Environment

The IBM, SAA AD/Cycle Language Environment, Programming Guide, Version 1, Release 3, March 1994, describes the 370 Language Environment including callable services. Date and Time callable services are summarized at p. xvi. In addition to various date format conversions, two of those services provide for queries to determine the century within which the Language environment assumes that two digit dates lie (CEEQN – p. 146) and setting the century (CEESEN – p. 149). The manner in which format conversion handles ambiguous two digit years is explained at p. 84.

> By default, 2-digit years lie within the 100-year range starting 80 years prior to the system date. Thus, in 1993, all 2-digit years represent dates between 1913 and 2012, inclusive. This default range is changed by using the callable service 'CEESCEN-Set the Century Window' on page 149".

A little thought will reveal that if all 2 digit dates fall between 1913 and 2012, then the system uses 13 as the "start year"(following Lysgaard or Ohms) and assigns "19" as C1 if the year is greater than or equal to 13 and assigns "20" as C2 if the year is less than "13". If there was any doubt that this environment is related to the YYMMDD format, that doubt is dissipated by the disclosure at p. 149, under the heading CEESCEN

This is another example in which the text relates the 100 year window to the present. The default range (p. 84) is identified as beginning 80 years prior to the present. As noted with respect to Ohms, Dickens does not mention the relationship of the 100 year window to the present. What is important is that, to the extent there is a description of a 10 decade window in Dickens, *that description is anticipated by this reference*, as well as the other references described here.

SAS Language: Reference

"SAS Language: Reference", Version 6. First Edition 1990 describes facilities of the SAS system. The informats listed on p. 63 have several date variations such as ddmmmyy, ddmmyy, mmddyy, mmyy and yymmdd. The yy, mm and dd digits used in this reference have the identical meanings to those used by Dickens. The mmm digits refer to the use of three alpha characters to identify a month, also as in Dickens. At p. 129, the manual describes the protocol used with 2-digit year values. It says:

> Two-digit years are attributed to the century specified by the YEARCUTOFF= system option. The YEARCUTOFF= system default is 1900, allowing the years 1900 through 1999 to be specified as two-digit year values. You can also override the system default and specify a beginning date of your choice.

Of course the "beginning date" is the same as Ohms' "starting point", Lysgaard's "start year" and Dickens' Y_AY_B. SAS Language: Reference also refers to sorting (p. 131) emphasizing the importance to sorting of correct date interpretation, such as by the use of the YEARCUTOFF parameter. The YEARCUTOFF parameter, its use and associated facilities is described in detail

at p. 790. Instead of using the phrase "beginning date", the description at p. 790 refers to the "first year of the 100 year span". This is clearly the same as Dickens' "value for the first year of the 10-decade period of time" which is the definition of Y_AY_B found at col. 1, lines 63-65 of the Dickens patent. Fig. 16.1 (p. 791) which illustrates the 100 year span and the YEARCUTOFF parameter could apply to Dickens as well as to the SAS system.

Shaw

Shaw, in "CAP Gemnni Tackles the Year 2000", NEWS 3X/400, June 1995, p. 30, describes Y2K "windowing" in a single sentence. He said:

> Another common solution is to pick a cut-off point, say 1950, where any two-digit dates after that point (51, 52 and so on) are treated as 20th century dates and any dates before that (01, 02, and so on) are considered post-millennium dates.

Of course, the "cut-off" is the same parameter that Dickens labels as Y_AY_B. "Considering" the two digit dates as either 20th or 21st century dependent on the relation between the "cut-off" and the two digit year is the same as the "reformatting". Recall that YEARCUTOFF is also the parameter used in SAS Language: Reference, Version 6.

Shaughnessy

The Shaughnessy patent relates to computer systems that perform date operations on date fields spanning a century boundary. While the title is generic, the text indicates that it is Y2K which is the genesis of the patent. Shaughnessy describes the modifications to computer systems so that date operations can be performed correctly even when processing dates after December 31, 1999, e.g., Y2K. The data formats that are employed in accordance with Shaughnessy are found in a table attached as an appendix, see column 18. As indicated in column 18, there are several different formats that are represented as "YYMMDD". The appendix notes that for formats B, F and S (all of which are YYMMDD) that "the date cycle is 100 years". The general sequence of operations described by Shaughnessy is shown in figure 2 where the requested date operation is performed only after certain precursor steps are performed. The precursor steps include determining the current date, determining the end of the 100-year cycle and determining two possible century values. As shown in figure 4, the end of the 100-year cycle can be determined either based on the current date or based on the system installation date. In either event, once the end of the 100-year cycle is determined, the system derives two dates separated by a period of 100 years (10 decades).

Figure 5 shows how the two possible century values are determined. In particular, the later of the two centuries is determined as the century of the date at the end of the 100-year cycle, and the earlier century is the century preceding the later century.

Figure 7 shows how the century value (this corresponds to C_1C_2 of Dickens) is assigned. Assignment includes a comparison between the date representation (e.g., YY) with a "end of the 100 year cycle". The text indicates that:

"If the date is less than or equal to the end of the 100 year cycle date, the CENTURY2 value is assigned to the date (box 64). If the date is greater than the end of cycle date, the CENTURY1 value is assigned to the date (box 66)". Column 7, lines 9-13.

Note this Shaughnessy century determination is identical to the Dickens century determination. This identity is apparent by equating Dickens' Y_AY_B with the Shaughnessy "end of the 100 year cycle date".

After the century designator (this is CENTURY1 or CENTURY2) is assigned the date is reformatted to the format YYYYMMDD (see column 6 line 65). Of course, the first two of the Y digits represent the assigned century. This is identical to the format ($C_1C_2Y_1Y_2M_1M_2D_1D_2$) of Dickens claim 11.

While the Shaughnessy specification comprehends several embodiments, the embodiment which deals with a C1 date format is limited to date spans of 100 years or less. This is apparent from the determination of the "end of the 100 year cycle" and the fact the date ambiguity is resolved by determining which of two possible century values is appropriate.

Shaughnessy indicates (column 1, line 26 and column 8, line 34 – column 12, line 20) that computers typically compare dates. Indeed, sequentially comparing dates is also referred to as sorting and therefore in these passages Shaughnessy teaches that dates processed in accordance with the procedure just described can then be used for sorting purposes.

While the impetus for the Shaughnessy patent was Y2K (the problem occasioned by the transition from the 20th to the 21st century) it should be clear that the Shaughnessy specification also describes solutions applicable to analogous but not necessarily identical problems. The Shaughnessy specification describes (1) maintaining a database unchanged (1/60-2/5) even though the data may lead to ambiguity and (2) the alteration of the program logic by the addition of a subroutine. The subroutine allows the selection of the one appropriate date when the stored data is otherwise ambiguous. Reference to the Appendix (col. 18-19) indicates that Shaughnessy contemplated one data format in which the date "cycle" was 100 years (the C1 format) and another data format in which the date "cycle" was 10000 years (C2). Shaughnessy describes that using a two digit year data format, 100 year cycle data becomes ambiguous at the turn of the century (that is the reason it is necessary to determine whether a date is CENTURY1 or CENTURY2). Using four digit year data there is a similar ambiguity in 10000 year cycle data, i.e., when there is a transition from the year 9999 to the year 10000. While the Shaughnessy specification may apply to databases with C1 data, as well as database with C2 data, there is nothing in the patent to suggest mixing 100 year cycle data with 10000 year cycle data in one database. It should be clear from the description of "windowing" contained in Ohms (1986), Lysgaard (1987), Browe (1990), SAS Language Reference Manual (1990), SAA AD/Cycle Language Environment (1994) and the Japanese Patent Publication 05-027947 (1993) that by the 1994 filing of the Shaughnessy application the art was well aware of the 100 year limit associated with two digit year data. Consequently the Shaughnessy description is quite adequate on the question of limiting data ranges to 100 years when resolving date ambiguity with two digit year data. The first Shaughnessy flowchart has a function to determine the "end of 100 year cycle" – this discloses the 100 year limit of year data to those skilled in the art as of 1994.

Shaughnessy, like some of the other references also relates the 100 year window to the present. This relationship is determined by the "number of years of future dating" (6/10). Shaughnessy also provides another degree of freedom to the user in that the "end of the 100 year cycle" may be updated (6/13). In both respects Shaughnessy goes beyond the Dickens specification in that *Dickens never mentions either parameter.* Neither of these parameters ("number of years of future dating" or the ability to update the "end of the 100 year cycle") bears on the manner in which Shaughnessy anticipates the Dickens 100 year window or the manner in which the correct century designator is determined. To be sure Shaughnessy describes using the "end of the 100 year cycle" while Dickens uses the beginning of the 100 year cycle. However, for any given window these two numbers differ by unity. Consider a Dickens window defined by $Y_A Y_B$ of 50. This window extends from 1950 to 2049. The corresponding Shaughnessy "end of the 100 year cycle" is 49, and it defines the same window, from 1950 to 2049.

Application of the References

Attachments 1-7 are a series of claim charts applying the terms of the claims to the references. As evidenced by the claim charts the Requestor contends that:

Ohms anticipates claims 1-3, 7, 9 and 10, [Attachment 1],

Shaughnessy anticipates claims 1-7, 11 and 12 [Attachment 2],

Lysgaard anticipates claims 1-15 [Attachment 3], and

Browe anticipates claims 1-3, 5 and 8 [Attachment 4].

The Requestor further contends that:

Ohms considered with the Japanese Published application ('947) invalidates (under 35 USC 103) claims 4, 11 and 13-15 [Attachment 5],

Shaughnessy considered with the Japanese Published application ('947) invalidates (under 35 USC 103) claims 4, 6, 8 and 13 [Attachment 6], and

Ohms considered with the Millennium Publication invalidates (under 35 U.S.C. 103) claims 5, and 11 [Attachment 7].

Shaughnessy taken with '947

Claims 8 and 13 have in common a step of selecting Y_A Y_B such that Y_B is zero (0), in other words Y_A Y_B is divisible by ten. Whether or not this specificity amounts to an unobvious difference (over selecting any other value for Y_A Y_B) is academic in this context inasmuch as one of the examples in '947 is the use of the quantity "60" for the parameter which corresponds to Y_A Y_B. Claims 1 and 11 (the parent claims for claims 8 and 13, respectively) are each anticipated by the Y2K related disclosure of the Shaughnessy patent. '947 discloses another

Y2K solution. The disclosure of '947 shows (if any showing is necessary) an example of the use of a parameter corresponding to Y_A Y_B which is divisible by ten. Because of the relation between the subject matter of Shaughnessy and '947 (both Y2K related) those skilled in the art would naturally view the two together and as such note the '947 suggestion of using a parameter corresponding to Y_A Y_B which is divisible by ten as applicable to Shaughnessy. Requestor submits that the foregoing demonstrates that it would have been obvious in the sense of 35 USC 103 at the time ('947 was published in 1993 and Shaughnessy has a 1994 filing date) to use a parameter corresponding to Y_A Y_B which is divisible by ten in the method described by Shaughnessy.

Claims 4, 6 have in common a step of "sorting" subsequent to the "reformatting" step of the parent claim. '947 discloses the benefit to sorting operations from Y2K remediation. The parent claims 1 and 5, respectively are anticipated by Shaughnessy. Both Shaughnessy and '947 relate to Y2K remediation or correction. Because of the relation between the subject matter of Shaughnessy and '947 (both Y2K related) those skilled in the art would naturally view the two together and as such note the '947 teaching of the benefits to sorting operations from Y2K remediation as applicable to the Shaughnessy Y2K remediation. Thus to the extent the disclosure of Shaughnessy fails to anticipate claims 4 and 6, consideration of '947 overcomes the validity of these claims. Requestor submits that, for the reasons outlined above, claims 4 and 6 describe subject matter which would have been obvious to those skilled in the art at the time ('947 was published in 1993 and Shaughnessy has a 1994 filing date).

Ohms taken with '947

Claims 4 and 11, as well as 13, 14 and 15 (dependent on claim 11) contain a step of "sorting" subsequent to a "reformatting" step. This subject matter is absent from claim 1. '947 discloses the benefit to sorting operations from Y2K remediation. Claim 1 is anticipated by Ohms. In addition claims 11 and 13-15 contain a more specific "reformatting" step than that found in claim 1. As evidenced by the attachment 5 however, this more specific "reformatting" subject matter is also anticipated by Ohms. Both Ohms and '947 relate to Y2K remediation or correction. Because of the relation between the subject matter of Ohms and '947 (both Y2K related) those skilled in the art would naturally view the two together. Consequently those of skill would note the '947 teaching of the benefits to sorting operations from Y2K remediation and understand those same benefits would flow from the Ohms Y2K remediation. Thus to the extent the disclosure of Ohms fails to anticipate the "sorting" subject matter of claims 4, 11 and 13-15, consideration of '947 overcomes the validity of these claims with respect to the "sorting" subject matter. Requestor submits that, for the reasons outlined above, claims 4, 11 and 13-15 describe subject matter which would have been obvious to those skilled in the art at the time ('947 was published in 1993 and Ohms was published in 1986).

Ohms taken with The Millennium Journal

Claims 5 and 11 differ from claim 1 by specifying the format of the reformatted representation as opposed to claim 1 which only recounts the data involved in the reformat operation. Both Ohms and the Millennium Journal deal with Y2K remediation. Because of the relation between their disclosures those skilled in the art at the time (Ohms has a 1986

publication date and The Millennium Journal has a July 1995 publication date) would have naturally viewed the two disclosures together. The Millennium Journal specifies a number of data formats used in connection with Y2K remediation, one of those formats is the specific format called for in claims 5 and 11. To the extent, if any, by which Ohms fails to anticipate claims 5 and 11, consideration of the Millennium Journal, and specifically the disclosure therein of the specific format recited in claims 5 and 11, reveals that those skilled in the art at the time would have taken from The Millennium Journal knowledge that use of the format claimed in claims 5 and 11 was extant. That knowledge, coupled with the other teachings of Ohms would have rendered the subject matter of claims 5 and 11 obvious (35 U.S.C. 103) to those skilled in the art at the time, thus rendering it evident that claims 5 and 11 are invalid.

Conclusion

For the reasons expressed, Requestor submits that each and every claim of patent 5,806,063 is invalid as anticipated or is such as would have been obvious to those skilled in the art at the appropriate time.

Claims of 5806063 1. A method of processing symbolic representations of dates stored in a database, comprising the steps of	Ohms Ohms describes a "date processing method" (p. 244) as well as a "conversion function" (p. 248)
providing a database with symbolic representations of dates stored therein according to a format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator, all of the symbolic representations of dates falling within a 10-decade period of time;	see the table on p 247 including reference to "a short Gregorian date", the conversion function works with a number of data formats including this one, Ohms describes, at p. 249, the 100 year limitation (identical to 10-decades)
selecting a 10-decade window with a Y_A Y_B value for the first decade of the window, Y_A Y_B being no later than the earliest Y_1 Y_2 year designator in the database;	see p. 248, right hand column – specify a year as the desired starting point of the range – this is Y_A Y_B, and it is no later than any year in the data base
determining a century designator C_1 C_2 for each symbolic representation of a date in the database, C_1 C_2 having a first value if Y_1 Y_2 is less than Y_A Y_B and having a second value if Y_1 Y_2 is equal to or greater than Y_A Y_B, and	the century designation is determined by comparing the year date with the desired starting point, if the year in question is greater then the century is the earlier one and vice versa, see p. 248
reformatting the symbolic representation of the date with the values C_1 C_2, Y_1 Y_2, , M_1 M_2, and D_1 D_2 to facilitate further processing of the dates.	the "implied century" (see p. 248, right hand column) which is the result of the date "conversion" is the reformatted date, note this claim does not require any specific format as long as the four parameters are used.
2. The method of claim 1, wherein the 10-decade window includes the decade beginning in the year 2000.	See p. 248, the dates determined are in the 20th and 21st centuries and so include the decade including the year 2000.
3. The method of claim 2, wherein the step of determining includes the step of	
determining the first value as 20 and the second value as 19.	See p. 248, the dates determined are in the 20th and 21st centuries

Claims of 5806063	Ohms
7. The method of claim 1, wherein the step of providing a database includes the step of	
converting pre-existing date information having a different format into the format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator and Y_1 Y_2 is the numerical year designator.	Ohms describes a number of date format conversions as well as the use of the specific YYMMDD format, the table on p. 247 refers to one conversion to YYMMDD
9. The method of claim 1, including an additional step, after the step of reformatting, of	
storing the symbolic representation of dates and their associated information back into the database.	See p. 248-249 where Ohms discusses the storage issue and expressly mentions storing date data with four digit year representations.
10. The method of claim 9, including the additional step, after the step of reformatting, of	
manipulating information in the database having the reformatted date information therein.	Ohms refers to the need for date conversions for handling future applications (p. 250). Future applications for data base programs require manipulation of the data.

'063 claims	Lysgaard
1. A method of processing symbolic representations of dates stored in a database, comprising the steps of	the YY year data (see below) is a symbolic representation and the interpretation (p. 515) of this symbolic data corresponds to the processing
providing a database with symbolic representations of dates stored therein according to a format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator, all of the symbolic representations of dates falling within a 10-decade period of time;	data bases store dates with 2 digits representing the year (p. 513); the paragraph bridging pp 517-18 makes it clear that the typical data base stores yy, mm and dd data for a date, p. 515 – "if at all times a date has a relevant range of less than (or equal to) 100 years" this is the direction to insure the database spans no more than 100 years
selecting a 10-decade window with a Y_A Y_B value for the first decade of the window, Y_A Y_B being no later than the earliest Y_1 Y_2 year designator in the database;	information as to the valid time interval, such as the start year for the 100 year interval (p. 515), the start year corresponds to Y_A Y_B , by definition there is no year data (Y_1 Y_2) in the database earlier than the "start year"
determining a century designator C_1 C_2 for each symbolic representation of a date in the database, C_1 C_2 having a first value if Y_1 Y_2 is less than Y_A Y_B and having a second value if Y_1 Y_2 is equal to or greater than Y_A Y_B, and	the interpretation of the data (see p. 515), where 55-99 is interpreted as 1955-1999 while 00-54 is interpreted as 2000-2054 comprehends determining the century designator on the basis recited in the claim
reformatting the symbolic representation of the date with the values C_1 C_2, Y_1 Y_2,, M_1 M_2, and D_1 D_2 to facilitate further processing of the dates.	the reformatting is the same as the "temporary addition of auxiliary fields stating the century" (p. 516) by prepending the century designator (19 or 20)

2. The method of claim 1, wherein the 10-decade window includes the decade beginning in the year 2000.	the abstract and initial heading refer to the year 2000, and the example on p. 515 includes the decade beginning in the year 2000

3. The method of claim 2, wherein the step of determining includes the step of determining the first value as 20 and the second value as 19.	see the example on p. 515, where the first value is associated with the year dates 00-54 and the second is associated with the dates 55-99

4. The method of claim 1, including an additional step, after the step of reformatting, of	
sorting the symbolic representations of dates.	the paragraph entitled "sorting" on p. 516 makes it clear that sorting can be accomplished after the proper date interpretation

5. The method of claim 1, wherein the step of reformatting includes the step of reformatting each symbolic representation of a date into the format C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2.	the reformatting is the same as the "temporary addition of auxiliary fields stating the century" (p. 516) by prepending the century designator (19 or 20)

6. The method of claim 5, including an additional step, after the step of reformatting, of sorting the symbolic representations of dates using a numerical-order sort	the paragraph on p. 516, entitled "sorting" describes the sorting operation after the "temporary addition", the fact that it is a numerical order sort is made clear by the description of the sort order (6789012345) for the period 1960-2059 at p. 516

7. The method of claim 1, wherein the step of providing a database includes the step of	
converting pre-existing date information having a different format into the format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator and Y_1 Y_2 is the numerical year designator.	the text indicates (p. 516) that most date manipulations take place with standard routines, at p. 518 the text notes that the standard routines also handle conversion between different formats

8. The method of claim 1, wherein the step of selecting includes the step of selecting Y_A Y_B such that Y_B is 0 (zero).	the paragraph on sorting (p. 516) describes an example where the "start year" is at the beginning of a decade (60) such that the parameter corresponding to Y_B is 0

9. The method of claim 1, including an additional step, after the step of reformatting, of	
storing the symbolic representation of dates and their associated information back into the database.	the step of storing is tantamount to converting a 2 digit year data base to one using 4 digit years, this is described at p. 518 where the text notes that "standard routines also include conversion between various date formats – for example dates which are exported from an old system (shortened year) to a new system (full year)".

10. The method of claim 9, including the additional step, after the step of reformatting, of	
manipulating information in the database having the reformatted date information therein.	the clause relates to any use (manipulating) of the data after a "reformat" has been stored, use of the data base is the purpose of any data base and so this step is inherent in any data base,

	such as that operated on by the Lysgaard method

11. A method of processing dates in a database, comprising the steps of	the YY year data (see below) is a date representation and the interpretation (p. 515) of this data corresponds to the processing
providing a database with symbolic representations of dates stored therein according to a format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator, all of dates falling within a 10-decade period of time which includes the decade beginning in the year 2000;	data bases store dates with 2 digits representing the year (p. 513); the paragraph bridging pp 517-18 makes it clear that the typical data base stores yy, mm and dd data for a date, p. 515 – "if at all times a date has a relevant range of less than (or equal to) 100 years" this is the direction to insure the database spans no more than 100 years, page 513 makes it clear that the problem is caused by the year 2000 and thus this year and the decade including it are included in the data
selecting a 10-decade window with a Y_A Y_B value for the first decade of the window, Y_A Y_B being no later than the earliest Y_1 Y_2 year designator in the database;	"information as to the valid time interval", such as "the start year" for the 100 year interval (p. 515), the start year corresponds to Y_A Y_B , by definition there is no year data (Y_1 Y_2) in the database earlier than the "start year"
determining a century designator C_1 C_2 for each symbolic representation of a date in the database, C_1 C_2 having a first value if Y_1 Y_2 is less than Y_A Y_B and having a second value if Y_1 Y_2 is equal to or greater than Y_A Y_B;	the interpretation of the data (see p. 515), where 55-99 is interpreted as 1955-1999 while 00-54 is interpreted as 2000-2054 comprehends determining the century designator on the basis recited in the claim
reformatting each date in the form C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2. to facilitate further processing of the dates; and	the reformatting is the same as the "temporary addition of auxiliary fields stating the century" (p. 516) by prepending the century designator (19 or 20)
sorting the dates in the form C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2.	that this processing is the predicate for sorting is described at p. 516, under the heading "sorting"

12. The method of claim 11, wherein the step of providing a database includes the step of converting pre-existing date information having a different format into the format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator.	the text indicates (p. 516) that most date manipulations take place with standard routines, at p. 518 the text notes that the standard routines also handle conversion between different formats

13. The method of claim 11, wherein the step of selecting includes the step of selecting Y_A Y_B such that Y_B is 0 (zero).	the paragraph on sorting (p. 516) describes an example where the "start year" is at the beginning of a decade (60) such that the parameter corresponding to Y_B is 0

14. The method of claim 11, including an additional step, after the step of sorting, of storing the sorted dates and their associated information back into the database.	the storing step is tantamount to converting a 2 digit year data base to one using 4 digit years, this is described at p. 518 where the text notes that "standard routines also include conversion between various date formats – for example dates which are exported from an old system (shortened year) to a new system (full year)".

15. The method of claim 14, including the additional step, after the step of sorting, of manipulating information in the database having the reformatted date therein.	the clause relates to any use (manipulating) of the data after a "reformat" has been stored, use of the data base is the purpose of any data base and so this step is inherent in any data base, such as that operated on by the Lysgaard method

Claims of 5806063 1. A method of processing symbolic representations of dates stored in a database, comprising the steps of providing a database with symbolic representations of dates stored therein according to a format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator, all of the symbolic representations of dates falling within a 10-decade period of time;	Shaughnessy Patent 5,630,118 The disclosed software assigns a century value to a two digit year date (7/6+), which is processing of symbolic dates One format which can form an input is YYMMDD, see Date Type "B" in the appendix at col.18, formats such as B have a 100 year (10-decade) cycle, see the footnote defining C1, in other words the format wraps modulo 100
selecting a 10-decade window with a Y_A Y_B value for the first decade of the window, Y_A Y_B being no later than the earliest Y_1 Y_2 year designator in the database;	software "determine[s] end of current 100 year cycle", step 16, fig. 2, 3 or 4, as the "end" of the 100 year range, the "end" year is one less than the beginning (if "37" is the last year of a 100 year period, "38" is the first year of the same period), the "end" year is no later than any date in the data base of 100 year cycle data
determining a century designator C_1 C_2 for each symbolic representation of a date in the database, C_1 C_2 having a first value if Y_1 Y_2 is less than Y_A Y_B and having a second value if Y_1 Y_2 is equal to or greater than Y_A Y_B, and	the century designator is determined by comparing two digit representation to the end of the 100 year cycle date, if the year being processed is greater, then the earlier century value is assigned and vice versa; (col. 7, lines 5-15)
reformatting the symbolic representation of the date with the values C_1 C_2, Y_1 Y_2,, M_1 M_2, and D_1 D_2 to facilitate further processing of the dates.	the reformatting is described at 6/57-65
2. The method of claim 1, wherein the 10-decade window includes the decade beginning in the year 2000.	Since the patent is directed to Y2K, it by definition includes the year 2000, col. 8, lines 7-18 refer to the 20th and 21st centuries
3. The method of claim 2, wherein the step of determining includes the step of	

4. The method of claim 1, including an additional step, after the step of reformatting, of	
sorting the symbolic representations of dates.	Shaughnessy refers (col. 1, line 26) to date comparisons; sorting is merely sequential date comparisons
5. The method of claim 1, wherein the step of reformatting includes the step of reformatting each symbolic representation of a date into the format C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2.	See 6/58-65, 8/10-20
6. The method of claim 5, including an additional step, after the step of reformatting, of	
sorting the symbolic representations of dates using a numerical-order sort	Shaughnessy refers (col. 1, line 26 and column 8, line 35 – column 12, line 20) to date comparisons; sorting is merely sequential date comparisons
7. The method of claim 1, wherein the step of providing a database includes the step of	
converting pre-existing date information having a different format into the format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator and Y_1 Y_2 is the numerical year designator.	see the appendix at col. 18 to illustrate a host of formats and col. 6, lines 58-65

11. A method of processing dates in a database, comprising the steps of	The disclosed software assigns a century value to a two digit year date (7/6+) which is processing of dates
providing a database with symbolic representations of dates stored therein according to a format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator, all of dates falling within a 10-decade period of time which includes the decade beginning in the year 2000;	One format which can form an input is YYMMDD, see Date Type "B" in the appendix at col.18, formats such as B have a 100 year (10-decade) cycle, see the footnote defining C1, in other words the format wraps modulo 100
selecting a 10-decade window with a Y_A Y_B value for the first decade of the window, Y_A Y_B being no later than the earliest Y_1 Y_2 year designator in the database;	software "determine[s] end of current 100 year cycle", step 16, fig. 2, 3 or 4, as the "end" of the 100 year range, the "end" year is one less than the beginning (if "37" is the last year of a 100 year period, "38" is the first year of the same period), the "end" year is no later than any date in the data base of 100 year cycle data
determining a century designator C_1 C_2 for each symbolic representation of a date in the database, C_1 C_2 having a first value if Y_1 Y_2 is less than Y_A Y_B and having a second value if Y_1 Y_2 is equal to or greater than Y_A Y_B;	the century designator is determined by comparing two digit representation to the end of the 100 year cycle date, if the year being processed is greater, then the earlier century value is assigned and vice versa; (col. 7, lines 5-15)
reformatting each date in the form C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2. to facilitate further processing of the dates; and	the reformatting is described at 6/57-65
sorting the dates in the form C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2.	Shaughnessy refers at col. 1, line 26 and in columns 8-10, to date comparisons, sorting is merely sequential date comparisons
12. The method of claim 11, wherein the step of providing a database includes the step of	
converting pre-existing date information having a different format into the format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator.	see the appendix at col. 18 to illustrate a host of formats and col. 6, lines 58-65

Claims of 5806063	Browe
1. A method of processing symbolic representations of dates stored in a database, comprising the steps of	Browe describes a utility for date calculations
providing a database with symbolic representations of dates stored therein according to a format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator, all of the symbolic representations of dates falling within a 10-decade period of time;	the parameters of the data base represented on p. 73 include MMDDYY, the comment (p.70) states "The reference date is typed in MMDDYY format and must refer to a date from 01/01/1950 to 12/31/2049 for this focexec to work correctly" That is the 100 year range (10-decades)
selecting a 10-decade window with a Y_A Y_B value for the first decade of the window, Y_A Y_B being no later than the earliest Y_1 Y_2 year designator in the database;	on p. 71, see the line of code: "If &YR GE 50 and &YR LE 99 then 19|&YR ELSE 20|&YR" In this expression Y_A Y_B=50
determining a century designator C_1 C_2 for each symbolic representation of a date in the database, C_1 C_2 having a first value if Y_1 Y_2 is less than Y_A Y_B and having a second value if Y_1 Y_2 is equal to or greater than Y_A Y_B, and	on p. 71, see the line of code: "If &YR GE 50 and &YR LE 99 then 19|&YR ELSE 20|&YR" In this expression "19" and "20" are the values for , C_1 C_2 ; the logic is the same as the claimed logic except stated in inverse order
reformatting the symbolic representation of the date with the values C_1 C_2, Y_1 Y_2, , M_1 M_2, and D_1 D_2 to facilitate further processing of the dates.	on p. 71, see the line of code: "If &YR GE 50 and &YR LE 99 then 19|&YR ELSE 20|&YR". In this expression the "19|&YR" and "20|&YR" show the reformatting with the determined century designator
2. The method of claim 1, wherein the 10-decade window includes the decade beginning in the year 2000.	The period 01/01/1950 to 12/31/2049 includes the decade beginning in the year 2000.

3. The method of claim 2, wherein the step of determining includes the step of	
determining the first value as 20 and the second value as 19.	on p. 71, see the line of code: "If &YR GE 50 and &YR LE 99 then 19|&YR ELSE 20|&YR". In this expression the "19|&YR" and "20|&YR" include the values "19" and "20"
5. The method of claim 1, wherein the step of reformatting includes the step of	
reformatting each symbolic representation of a date into the format C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2.	on p. 71, see the line of code: "If &YR GE 50 and &YR LE 99 then 19|&YR ELSE 20|&YR". In this expression the "19|&YR" and "20|&YR" show the reformatting having added the determined C_1 C_2
8. The method of claim 1, wherein the step of selecting includes the step of	
selecting Y_A Y_B such that Y_B is 0 (zero).	on p. 71, see the line of code: "If &YR GE 50 and &YR LE 99 then 19|&YR ELSE 20|&YR". "50" is a particular Y_A Y_B such that Y_B is 0 (zero).

Claims of 5806063	Ohms in light of (35USC 103) JP 05-027947 ('947)
4. The method of claim 1, including an additional step, after the step of reformatting, of	The manner in which Ohms anticipates the terms of claim 1 has already been described.
sorting the symbolic representations of dates.	'947 describes under "Constitution" that the processing to correct the Y2K problem is implemented "before sort/merge processing". This teaches that sorting can be implemented after Y2K correction. Since both Ohms and '947 are directed to Y2K correction, those skilled in the art would view both teachings as applying to the same problem. If needed then, '947's "sorting" statement reveals that sorting may be implemented after Y2K correction.
11. A method of processing dates in a database, comprising the steps of	Both Ohms and '947 are directed to date processing
providing a database with symbolic representations of dates stored therein according to a format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator, all of dates falling within a 10-decade period of time which includes the decade beginning in the year 2000;	see the table on p; 247 of Ohms including reference to "a short Gregorian date", the conversion function works with a number of data formats including this one, Ohms describes, at p. 249, the 100 year limitation (identical to 10-decades)
selecting a 10-decade window with a Y_A Y_B value for the first decade of the window, Y_A Y_B being no later than the earliest Y_1 Y_2 year designator in the database;	see Ohms, p. 248, right hand column – specify a year as the desired starting point of the range – this is Y_A Y_B, and it is no later than any year in the data base
determining a century designator C_1 C_2 for each symbolic representation of a date in the database, C_1 C_2 having a first value if Y_1 Y_2 is less than Y_A Y_B and having a second value if Y_1 Y_2 is equal to or greater than Y_A Y_B;	in Ohms, the century designation is determined by comparing the year date with the desired starting point, if the year in question is greater then the century is the earlier one and vice versa, see p. 248
reformatting each date in the form C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2. to facilitate further processing of the dates; and	in Ohms, the "implied century" (see p. 248, right hand column) which is the result of the date "conversion" is the reformatted date, "947, on the other hand replaces the code of 21st century years to maintain correct date order[0015], at [0020]

sorting the dates in the form C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2.	'947 describes under "Constitution" that the processing to correct the Y2K problem is implemented "before sort/merge processing". This teaches that sorting can be implemented after Y2K correction.
	Since both Ohms and '947 are directed to Y2K, it would be natural for those skilled in the art to view the two teachings together, including modifying Ohms' formatting as well as using the '947 suggestion concerning sorting.
13. The method of claim 11, wherein the step of selecting includes the step of	The application of Ohms and '947 to claim 11 is described above.
selecting Y_A Y_B such that Y_B is 0 (zero).	'947 has an example of the use of "1960" as the earliest date in the range [0011]. This results in dates of 00-59 being determined to be in the 21st century, i.e., the '947 parameter corresponding to Y_A Y_B is "60".
14. The method of claim 11, including an additional step, after the step of sorting, of	The application of Ohms and '947 to claim 11 is described above,
storing the sorted dates and their associated information back into the database.	Ohms, at p. 248-249 discusses the storage issue and expressly mentions storing date data with four digit year representations, i.e., just the format of the claimed C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2.
15. The method of claim 14, including the additional step, after the step of sorting, of	
manipulating information in the database having the reformatted date therein.	The application of Ohms and '947 to claim 14 is described above. Ohms refers to the need for date conversions for handling future applications (p. 250). Future applications for data base programs require manipulation of the data

Claims of 5806063	Shaughnessy Patent 5630118 in light of (35USC 103) JP 05-027947 ('947)
4. The method of claim 1, including an additional step, after the step of reformatting, of	The manner in which Shaughnessy patent 5630118 applies to claim 1 has already been described.
sorting the symbolic representations of dates.	'947 describes, under Constitution" that processing to correct the Y2K problem is implemented "before sort/merge processing". This teaches that sorting can be implemented after Y2K correction. Since both Shaughnessy and '947 are directed to Y2K correction, those skilled in the art would view both teachings as applying to the same problem. If needed then, '947's "sorting" statement reveals that sorting may be implemented after Y2K correction.
6. The method of claim 5, including an additional step, after the step of reformatting, of	The manner in which Shaughnessy patent 5630118 applies to claim 5 has already been described.
sorting the symbolic representations of dates using a numerical-order sort.	'947 describes under "Constitution" that the processing to correct the Y2K problem is implemented "before sort/merge processing". This teaches that sorting can be implemented after Y2K correction. Since both Shaughnessy and '947 are directed to Y2K correction, those skilled in the art would view both teachings as applying to the same problem. If needed then, '947's "sorting" statement reveals that sorting may be implemented after Y2K correction.
8. The method of claim 1, wherein the step of selecting includes the step of	The manner in which Shaughnessy patent 5630118 applies to claim 1 has already been described.
selecting Y_A Y_B such that Y_B is 0 (zero).	'947 has an example in which the 'earliest date" in the data base is "60", this is an example of Y_A Y_B such that Y_B is 0 (zero). Since both Shaughnessy and '947 are directed to Y2K correction, those skilled in the art

	would view both teachings as applying to the same problem and
	rely on the '947 suggestion of selecting a parameter corresponding to Y_A Y_B such that Y_B is 0 (zero), as described in '947 if any such suggestion might be necessary.
13. The method of claim 11, wherein the step of selecting includes the step of	The manner in which Shaughnessy patent 5630118 applies to claim 11 has already been described.
selecting Y_A Y_B such that Y_B is 0 (zero).	'947 has an example in which the 'earliest date" in the data base is "60", this is an example of Y_A Y_B such that Y_B is 0 (zero). Since both Shaughnessy and '947 are directed to Y2K correction, those skilled in the art would view both teachings as applying to the same problem and rely on the '947 suggestion of selecting a parameter corresponding to Y_A Y_B such that Y_B is 0 (zero), as described in '947 947 if any such suggestion might be necessary.

Claims of 5806063	Ohms considered with The Millennium Journal (35 USC 103)
5. The method of claim 1, wherein the step of reformatting includes the step of	The application of Ohms to claim 1 has already been described
reformatting each symbolic representation of a date into the format C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2.	The Millennium Journal, in the first row of the Table on page 4 under the heading "Satisfying the Standard" show this particular format. It has already been noted that Ohms describes using the YY, MM and DD parameters as well as determining the CC data. Given that Ohms and The Millennium Journal are both directed to Y2K, that the latter reports on the use of this format and that Ohms describes the presence of just this data, it would have been obvious at the time to follow the report in The Millennium Journal and use this format.
11. A method of processing dates in a database, comprising the steps of	Ohms and The Millennium Journal both describe Y2K related date processing
providing a database with symbolic representations of dates stored therein according to a format wherein M_1 M_2 is the numerical month designator, D_1 D_2 is the numerical day designator, and Y_1 Y_2 is the numerical year designator, all of dates falling within a 10-decade period of time which includes the decade beginning in the year 2000;	see the table on p; 247 including reference to "a short Gregorian date", the conversion function works with a number of data formats including this one, Ohms describes, at p. 249, the 100 year limitation (identical to 10-decades)
selecting a 10-decade window with a Y_A Y_B value for the first decade of the window, Y_A Y_B being no later than the earliest Y_1 Y_2 year designator in the database;	see p. 248, right hand column - specify a year as the desired starting point of the range - this is Y_A Y_B, and it is no later than any year in the data base
determining a century designator C_1 C_2 for each symbolic representation of a date in the database, C_1 C_2 having a first value if Y_1 Y_2 is less than Y_A Y_B and having a	the century designation is determined by comparing the year date with the desired starting point, if the year in question is greater then the century is the earlier one and vice

second value if Y_1 Y_2 is equal to or greater than Y_A Y_B;	versa, see p. 248
reformatting each date in the form C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2 to facilitate further processing of the dates; and	the "implied century" (see Ohms p. 248, right hand column) which is the result of the date "conversion" is the reformatted date; at p. 4 of The Millennium Journal, the shows this very format
sorting the dates in the form C_1 C_2 Y_1 Y_2 M_1 M_2 D_1 D_2.	The Millennium Journal refers to "sort[ing]" in connection with Y2K processing.
	Inasmuch as both Ohms and Y2K are directed to Y2K, those skilled in the art would naturally view the two documents together. As such it would have been well within ordinary skill to recognize that data format noted in The Millennium Journal as used in the field could be used for the same purpose. The reference to "sort[ing]" merely is evidence that those skilled in the art were well aware that Y2K corrections would benefit subsequent sorting operations.